

Harding Lawson Associates

A Report Prepared for

United States Navy
Western Division
Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066-0720

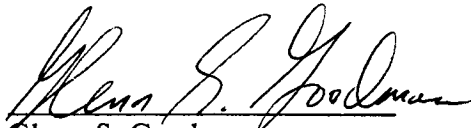
**BUILDING 123 INVESTIGATION
NAVAL STATION, TREASURE ISLAND
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA**

HLA Job No. 02176,159.02

by



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November 2, 1988

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DISTRIBUTION

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1.0 INTRODUCTION

This report presents the results of Harding Lawson Associates' (HLA) investigation of Building 123 at the Naval Station, Treasure Island, Hunters Point Annex (HPA), San Francisco, California (Plate 1).

The Fence to Fence Hazardous Material Survey (*ERM-WEST, 1988*) conducted at HPA identified locations that are suspect of possible environmental contamination. A sump inside Building 123 that may contain oily fluids was identified by the Navy as one such area. Characterization of the sump fluids is necessary to assess appropriate methods for disposal of the sump fluid. From 1946 to 1974, the Navy used this building as a battery shop. Waste acids, metals, and plating shop wastes (chlorinate, cyanide, and electrolytes) were generated at this site. Subsequent to 1974 and prior to 1986, Triple A Machine Shop leased the building to Mann Endless Cassettes. Mann Endless Cassettes used the facility as a warehouse. Since 1986, the building has been leased by the Navy to All Make Auto, First Metal and Chemical, and Sunray Trucking. These recent tenants use the facility as a storage and distribution warehouse.

The objectives of this investigation were to: 1) verify the existence of contamination in the sump; 2) assess whether an immediate threat to public health or the environment exists; and 3) identify potential response actions, if any, that might mitigate possible hazards at Building 123. However, because of the limited scope of work for this investigation, definitive interpretation of the analytical results with respect to the assessment of the threat to public health and the environment and the formulation of response actions is limited. The results presented herein provide a preliminary screening of conditions existing at the Building 123 sump site at the time of sampling, and are limited to those areas in the immediate vicinity of the sampling locations. The area of investigation is shown on Plate 2.

The scope of the investigation consisted of collecting and analyzing two sludge samples from a sump inside Building 123 and preparing this report. The sump is approximately 3 feet wide, 5 feet long, and 2 feet deep. Approximately 1.5 feet of fluid was found in the sump.

2.0 FIELD INVESTIGATION

Two sludge samples were collected on May 17, 1988 from a sump in the north central portion of Building 123 (Plate 2). The sump is approximately 3 feet wide, 5 feet long and 2 feet deep. Approximately 1.5 feet of fluid was found in the sump.

HLA personnel were equipped with Level D personal protective equipment upon site entry (*Section 7.0, Site Safety Plan (SSP); HLA 1988a*). Health and safety monitoring of the breathing zone was performed during sample collection. Readings in the breathing zone did not exceed background levels (1 to 2 ppm); however, strong organic odors were detected by the sampling crew within the immediate vicinity of the sump. At this time, Level C protective equipment was donned according to the HPA SSP (*HLA, 1988a*).

Sludge samples were collected from two locations inside the sump (Plate 2) using a dedicated clean, glass jar secured with dedicated nylon cord. The jar was lowered to the sump bottom at each sampling location. The jars were then retrieved and the recovered sludge was poured directly from the glass jar to the appropriate laboratory-supplied sample container for the specified analyses. The sample containers were labeled and stored in an ice chest containing blue ice (cooled to approximately 4°C) until they were delivered to the laboratory at the end of the day.

A field blank (OCO4) was prepared at the HLA field office at HPA by decanting deionized water from a clean glass pint jar into the appropriate laboratory-supplied sample containers for the specified analyses.

Chain of custody forms were completed in the field as specified in Section 13.0 of the Quality Assurance Project Plan (QAPP) (*HLA, 1988b*) and the samples were delivered to the analytical laboratory, Curtis and Tompkins, LTD., at the end of the day.

3.0 CHEMICAL ANALYSES AND RESULTS

The two sludge samples collected from the sump in Building 123 and the field blank were analyzed for priority pollutant metals (ICP Test Method 6010) and for organochlorine pesticides and PCBs (EPA Test Method 608). PCBs and Organochlorine pesticides were not detected in either sample. Metals were detected in both sludge samples. The most notable metals detected were antimony, arsenic, barium, cadmium, chromium-total, copper, lead, molybdenum, nickel, selenium, and zinc. The blank sample (0C04) contained low levels of nickel and zinc. The pH of the samples ranged from 7.3 to 7.4. Table 1 summarizes those analytes detected. The laboratory reports and the chain of custody form are presented in Appendix A.

4.0 DISCUSSION

On the basis of the analyses conducted at the Building 123 sump, the material in the sump appears to pose no immediate threat to human health and/or the environment. No PCBs were detected on the sump sludge; however, low levels of metals were detected. The metals concentrations from these analyses are below the Total Threshold Concentration (TTLC) Values (*State of California, 1985*). It is not known if the sump is leaking or discharging liquids to the soil and/or ground water or to drains within Building 123. The sump was covered by an open mesh steel grate. This cover could allow tenants working inside the building to come into contact with the sump liquid. In addition, a large engine block was located directly on top of and adjacent to the sump. The engine block appeared to be in the process of being cleaned or drained and had metal filings and oily material surrounding its base.

During the site investigation, a second sump was observed inside Building 123 approximately 20 feet north of the sampled sump. This second sump was also filled with liquid; however, machinery obstructed access to the second sump.

5.0 RECOMMENDATIONS

We recommend that the sludge/fluid material in the sump at Building 123 be further characterized for TPH and oil and grease, removed, and properly disposed by a licensed waste disposal contractor in a timely manner. Once the sump is empty, the sump walls should be cleaned and inspected for leaks/cracks that may provide pathways for the sump liquid to enter the surrounding soils or ground water. The second sump inside Building 123 should also be characterized so that the liquid inside it can be removed and the sump can be inspected. Personnel working within the building (employees of All Make Auto, First Metal and Chemical, and Sunray Trucking) may have the potential for dermal exposure to the material in these sumps.

Activities such as engine block cleaning in the vicinity of the sump or oil disposal into the sump should cease as soon as possible. Because this site is part of the ongoing Remedial Investigation (RI) at HPA, (IR-10, the Battery and Electroplating Shop), a full characterization of soils, floor drains, and ground water at the site is not necessary at this time but is included in the RI. The data collected during this investigation should be reviewed and considered during the RI.

6.0 REFERENCES

- ERM WEST, 1988. *Fence to Fence Hazardous Material Survey, Naval Station, Treasure Island, Hunters Point Annex, San Francisco, California.* July 1988.
- HLA, 1988a. *Site Safety Plan, Naval Station, Treasure Island, Hunters Point Annex, San Francisco, California.* January 14.
- HLA, 1988b. *Quality Assurance Project Plan (QAPP), Naval Station, Treasure Island, Hunters Point Annex, San Francisco, California.* May 26.
- State of California, 1985. *Title 22, California Administrative Code, Section 66699.*

TABLES

**Table 1. Selected Building 123-Battery and Electroplating
Shop Investigation Analytical Results**

CAM 17 Metals in Soils and Wastes
Digestion Method: EPA 3050

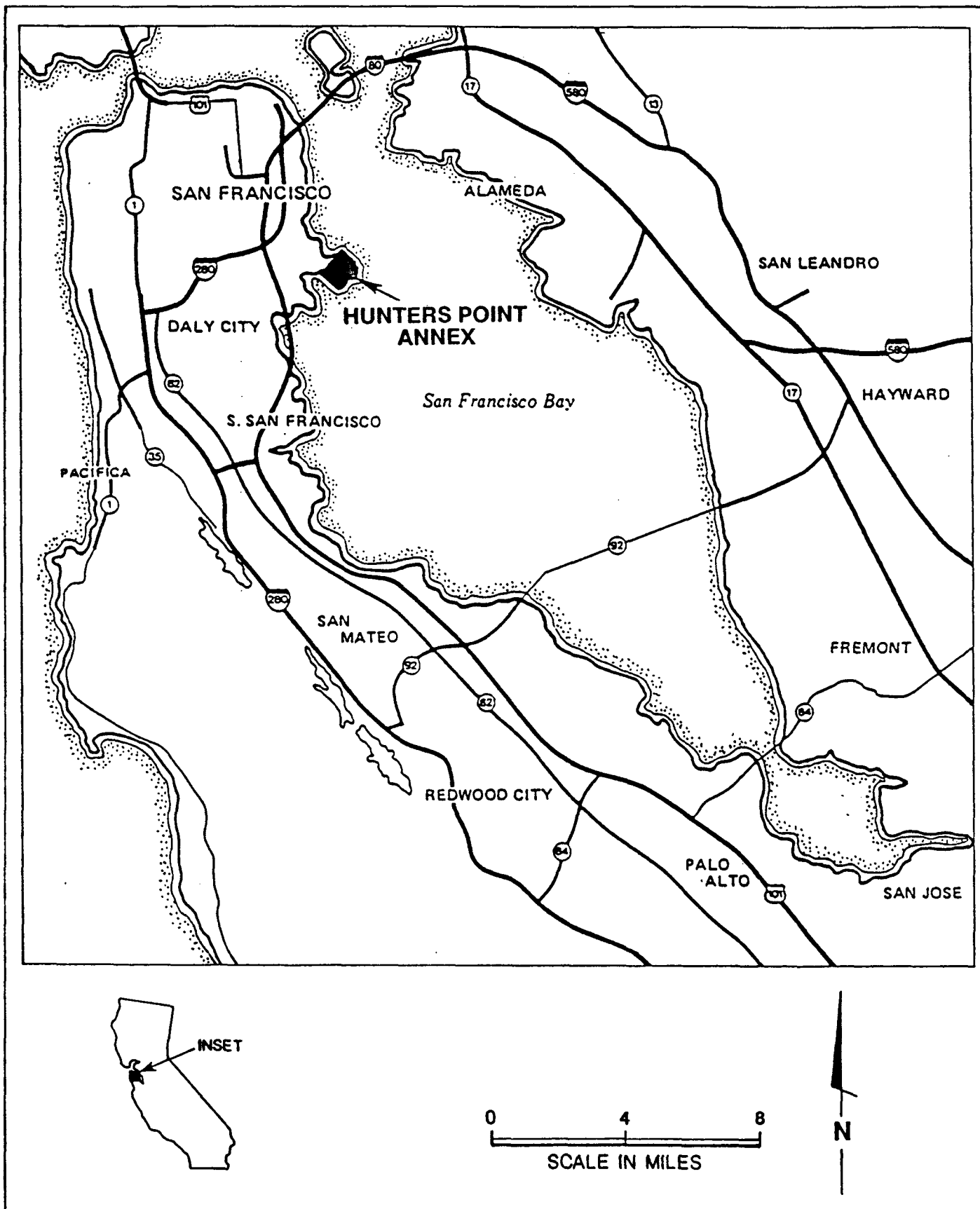
Metal	Detection Limit (mg/kg)	<u>Sludge Samples</u>		Detection Limit (mg/l)	Field Blank (OCO4) (mg/l)	Method
		BE01 (mg/kg)	BE02 (mg/kg)			
Antimony	3.0	5.0	ND	0.2	ND	EPA 7040
Arsenic	2.0	4.0	5.0	0.1	ND	EPA 6010
Barium	5.0	18	12	0.2	ND	EPA 7080
Beryllium	0.5	ND	ND	0.02	ND	EPA 7090
Cadmium	0.3	3.9	2.0	0.01	ND	EPA 6010
Chromium (total)	0.5	2.8	2.7	0.02	ND	EPA 6010
Cobalt	0.5	ND	155	0.02	ND	EPA 6010
Copper	0.5	77	26	0.02	ND	EPA 6010
Lead	3.0	135	140	0.2	ND	EPA 6010
Mercury	0.1	ND	ND	0.001	ND	EPA 7470
Molybdenum	0.5	20	2.3	0.02	ND	EPA 6010
Nickel	0.5	ND	3.7	0.02	0.09	EPA 6010
Selenium	3.0	3.5	3.3	0.2	ND	EPA 6010
Silver	1.0	ND	ND	0.05	ND	EPA 6010
Thallium	3.0	ND	ND	0.2	ND	EPA 7840
Vanadium	0.5	ND	ND	0.2	ND	EPA 6010
Zinc	0.5	470	360	0.01	0.03	EPA 6010

ND = Not detected.

mg/l = milligrams per liter

mg/kg = milligrams per kilogram

ILLUSTRATIONS



Harding Lawson Associates
Engineers and Geoscientists

Location Map
HPA Building 123
Hunters Point Annex
San Francisco, California

PLATE

1

DRAWN:
ML

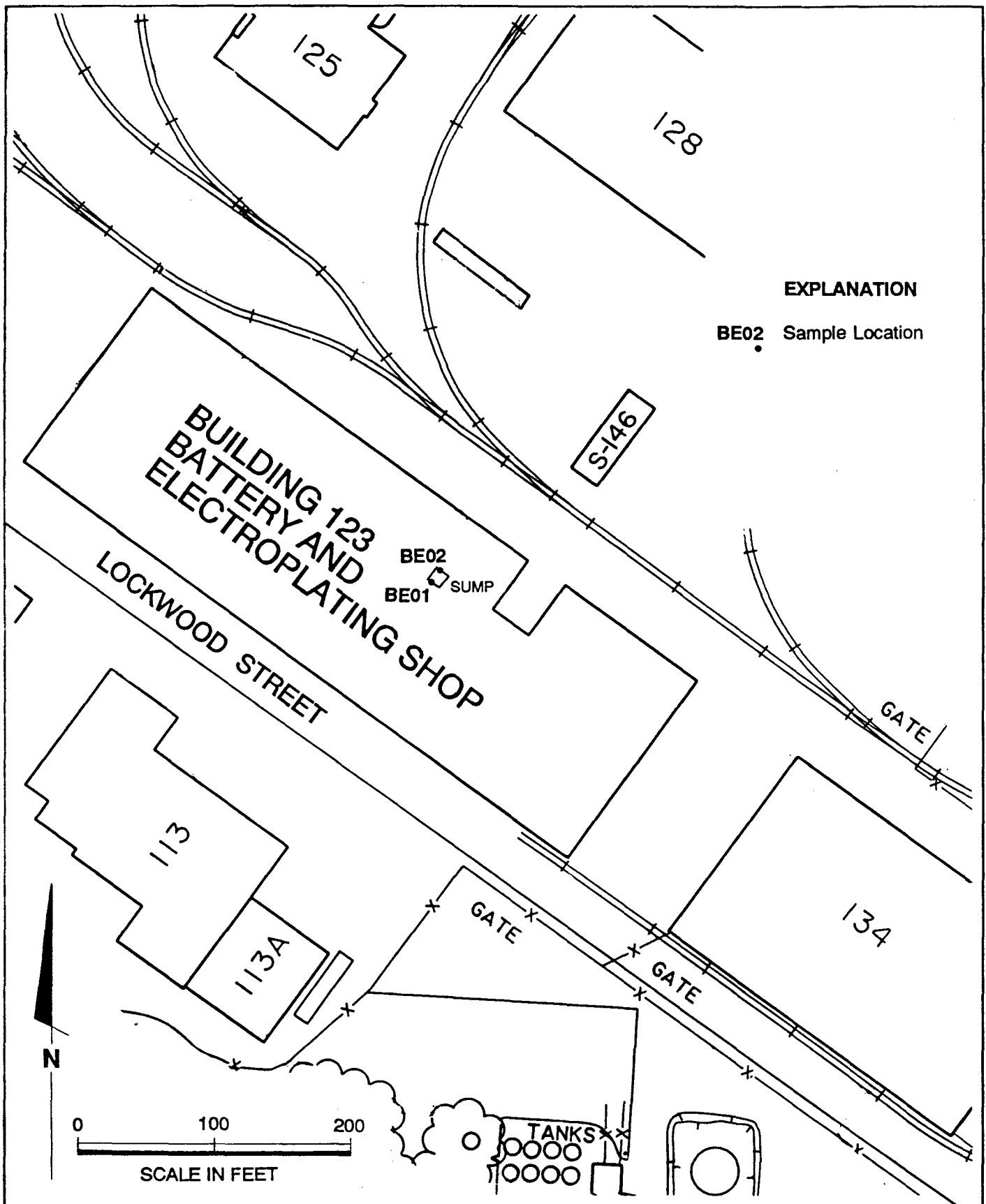
JOB NUMBER
2176,159.02

APPROVED:

DATE
6/88

REVISED

DATE



Harding Lawson Associates
Engineers and Geoscientists

Site Plan
HPA Building 123
Hunters Point Annex
San Francisco, California

PLATE

2

DRAWN
ML

JOB NUMBER
2176,159.02

APPROVED

DATE
6/88

REVISED

DATE

Appendix A

LABORATORY REPORT AND CHAIN OF CUSTODY

**APPENDIX A
LABORATORY REPORT AND CHAIN OF CUSTODY
BUILDING 123 INVESTIGATION**

**THE ABOVE IDENTIFIED APPENDIX HAS MISSING
PAGES. IT COULD NOT BE DETERMINED
WHETHER THESE PAGES ARE MISSING OR THE
APPENDIX WAS ISSUED WITHOUT THESE
PAGES.**

QUESTIONS MAY BE DIRECTED TO:

**DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132**

TELEPHONE: (619) 532-3676

LABORATORY NUMBER: 14724
 CLIENT: HARDING LAWSON ASSOCIATES
 JOB #: 2176,159/163/160.02,
 HUNTERS POINT

DATE RECEIVED: 05/17/88
 DATE ANALYZED: 05/18/88
 DATE REPORTED: 06/01/88
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=====					
	C&T ID:	14724-3	14724-4	14724-5	14724-9
PARAMETER	SAMPLE ID:	8899PH01	8899PH02	8899PH03	8899OC04
=====					
pH, SU EPA 9040		7.3	7.4	7.4	5.5
CYANIDE, mg/L SMWW 412J		ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
SULFIDE, mg/L SMWW 427D		6.5	ND(1)	ND(1)	ND(1)
OIL & GREASE, mg/L SMWW 503A		ND(20)	ND(20)	ND(20)	ND(20)

ND = NONE DETECTED. LIMIT OF DETECTION IS INDICATED IN PARENTHESES.

LABORATORY NUMBER: 14724-1
 CLIENT: Harding Lawson Associates
 SAMPLE ID: 8899BE01
 HLA Job #: 2176,159/163/160.02
 HUNTERS POINT

DATE RECEIVED: 05/17/88
 DATE ANALYZED: 05/24,27/88
 DATE REPORTED: 06/01/88
 PAGE 3 OF 34

CAM 17 Metals in Soils & Wastes
 Digestion Method: EPA 3050

METAL	RESULT mg/Kg	DETECTION LIMIT mg/Kg	METHOD
Antimony	5.0	3.0	EPA 7040
Arsenic	4.0	2.0	EPA 6010
Barium	18	5.0	EPA 7080
Beryllium	ND	0.5	EPA 7090
Cadmium	3.9	0.3	EPA 6010
Chromium (total)	2.8	0.5	EPA 6010
Cobalt	ND	0.5	EPA 6010
Copper	77	0.5	EPA 6010
Lead	135	3.0	EPA 6010
Mercury	ND	0.1	EPA 7470
Molybdenum	20	0.5	EPA 6010
Nickel	ND	0.5	EPA 6010
Selenium	3.5	3.0	EPA 6010
Silver	ND	1.0	EPA 6010
Thallium	ND	3.0	EPA 7840
Vanadium	ND	0.5	EPA 6010
Zinc	470	0.5	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%SPIKE		%RPD	%SPIKE
Antimony	<1	115	Mercury	<1	105
Arsenic	19	105	Molybdenum	18	99
Barium	26	99	Nickel	15	92
Beryllium	<1	100	Selenium	17	115
Cadmium	15	80	Silver	<1	84
Chromium	22	80	Thallium	<1	125
Cobalt	<1	86	Vanadium	26	92
Copper	13	87	Zinc	9	82
Lead	11	82			

LABORATORY NUMBER: 14724-2
 CLIENT: Harding Lawson Associates
 SAMPLE ID: 8899BE02
 HLA Job #: 2176,159/163/160.02
 HUNTERS POINT

DATE RECEIVED: 05/17/88
 DATE ANALYZED: 05/24,27/88
 DATE REPORTED: 06/01/88
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CAM 17 Metals in Soils & Wastes
 Digestion Method: EPA 3050

METAL	RESULT mg/Kg	DETECTION LIMIT mg/Kg	METHOD
Antimony	ND	3.0	EPA 7040
Arsenic	5.0	2.0	EPA 6010
Barium	12	5.0	EPA 7080
Beryllium	ND	0.5	EPA 7090
Cadmium	2.0	0.3	EPA 6010
Chromium (total)	2.7	0.5	EPA 6010
Cobalt	155	0.5	EPA 6010
Copper	26	0.5	EPA 6010
Lead	140	3.0	EPA 6010
Mercury	ND	0.1	EPA 7470
Molybdenum	2.3	0.5	EPA 6010
Nickel	3.7	0.5	EPA 6010
Selenium	3.3	3.0	EPA 6010
Silver	ND	1.0	EPA 6010
Thallium	ND	3.0	EPA 7840
Vanadium	ND	0.5	EPA 6010
Zinc	360	0.5	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%SPIKE		%RPD	%SPIKE
Antimony	<1	115	Mercury	<1	105
Arsenic	19	105	Molybdenum	18	99
Barium	26	99	Nickel	15	92
Beryllium	<1	100	Selenium	17	115
Cadmium	15	80	Silver	<1	84
Chromium	22	80	Thallium	<1	125
Cobalt	<1	86	Vanadium	26	92
Copper	13	87	Zinc	9	82
Lead	11	82			

LAB NUMBER: 14724-9
 CLIENT: HARDING LAWSON ASSOCIATES
 JOB #: 2176,159/163/160.02, H. P.
 SAMPLE ID: 88990C04

DATE RECEIVED: 05/17/88
 DATE ANALYZED: 05/24,27/88
 DATE REPORTED: 06/01/88
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CAM 17 Metals in Aqueous Solutions

METAL	RESULT mg/L	DETECTION LIMIT mg/L	METHOD
Antimony	ND	0.2	EPA 7040
Arsenic	ND	0.1	EPA 6010
Barium	ND	0.2	EPA 7080
Beryllium	ND	0.02	EPA 7090
Cadmium	ND	0.01	EPA 6010
Chromium (total)	ND	0.02	EPA 6010
Cobalt	ND	0.02	EPA 6010
Copper	ND	0.02	EPA 6010
Lead	ND	0.2	EPA 6010
Mercury	ND	0.001	EPA 7470
Molybdenum	ND	0.02	EPA 6010
Nickel	0.09	0.02	EPA 6010
Selenium	ND	0.2	EPA 6010
Silver	ND	0.05	EPA 6010
Thallium	ND	0.2	EPA 7840
Vanadium	ND	0.02	EPA 6010
Zinc	0.03	0.01	EPA 6010

ND = None Detected

QA/QC SUMMARY

	%RPD	%SPIKE		%RPD	%SPIKE
Antimony	<1	115	Mercury	<1	89
Arsenic	4	94	Molybdenum	6	98
Barium	31	109	Nickel	20	91
Beryllium	<1	100	Selenium	1	100
Cadmium	6	96	Silver	17	84
Chromium	<1	90	Thallium	<1	125
Cobalt	<1	88	Vanadium	8	91
Copper	5	91	Zinc	4	99
Lead	8	90			



LABORATORY NUMBER: 14724-9
CLIENT: Harding Lawson Associates
HLA Job #: 2176,159/163/160.02, HUNTERS POINT
CLIENT ID: 8899OC04

DATE RECEIVED: 05/17/88
DATE EXTRACTED: 05/23/88
DATE ANALYZED: 05/24/88
DATE REPORTED: 06/01/88
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EPA METHOD 625: BASE/NEUTRAL AND ACID EXTRACTABLES IN WATER
EXTRACTION METHOD: EPA 3510 LIQUID/LIQUID

ACID COMPOUNDS	RESULT ug/L	LOD ug/L
Phenol	ND	5
2-Chlorophenol	ND	5
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5
2,4-Dichlorophenol	ND	5
4-Chloro-3-methylphenol	ND	10
2,4,6-Trichlorophenol	ND	5
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
2-Methyl-4,6-dinitrophenol	ND	25
Pentachlorophenol	ND	25

BASE/NEUTRAL COMPOUNDS

Bis(2-chloroethyl)ether	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
Bis(2-chloroisopropyl)ether	ND	5
N-nitrosodi-n-propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
Bis(2-chloroethoxy)methane	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
Hexachlorobutadiene	ND	5
Hexachlorocyclopentadiene	ND	5
2-Chloronaphthalene	ND	5
Dimethyl phthalate	ND	5
Acenaphthylene	ND	5
2,6-Dinitrotoluene	ND	5
Acenaphthene	ND	5
2,4-Dinitrotoluene	ND	5
Fluorene	ND	5
Diethyl phthalate	ND	5
4-Chlorophenylphenyl ether	ND	5
N-Nitrosodiphenylamine	ND	5
1,2-Diphenylhydrazine	ND	5
4-Bromophenylphenyl ether	ND	5

LABORATORY NUMBER: 14724-9
CLIENT ID: 8899OC04

EPA 625
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BASE/NEUTRAL COMPOUNDS

	RESULT ug/L	LOD ug/L
Hexachlorobenzene	ND	5
Phenanthrene	ND	5
Anthracene	ND	5
Dibutylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	25
Pyrene	ND	5
Butylbenzylphthalate	ND	5
Benzo (a) anthracene	ND	5
3,3'-Dichlorobenzidine	ND	25
Chrysene	ND	5
Bis (2-ethylhexyl)phthalate	ND	5
Di-n-octyl phthalate	ND	5
Benzo (b) fluoranthene	ND	5
Benzo (k) fluoranthene	ND	5
Benzo (a) pyrene	ND	5
Indeno (1,2,3-cd) pyrene	ND	25
Dibenzo (a,h) anthracene	ND	25
Benzo (ghi) perylene	ND	25

HSL COMPOUNDS

Benzoic Acid	ND	50
2-Methylphenol	ND	5
4-Methylphenol	ND	5
2,4,5-Trichlorophenol	ND	5
Aniline	ND	5
Benzyl Alcohol	ND	25
4-Chloroaniline	ND	10
2-Methylnaphthalene	ND	5
2-Nitroaniline	ND	25
3-Nitroaniline	ND	25
Dibenzofuran	ND	5
4-Nitroaniline	ND	25

ND = None Detected, Limit of Detection (LOD) appears in far right column

QA/QC SUMMARY

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	101	2-Fluorobiphenyl	80
2,4,6-tribromophenol	157	Terphenyl-d14	60
Nitrobenzene-d5	96		

LABORATORY NUMBER: 14724-1
 CLIENT: HARDING LAWSON ASSOCIATES
 JOB #: 2176,159/163/160.02, HUNTERS POINT
 SAMPLE ID: 8899BE01

DATE RECEIVED: 05/17/88
 DATE EXTRACTED: 06/01/88
 DATE ANALYZED: 06/02/88
 DATE REPORTED: 06/03/88
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EPA 608: Organochlorine Pesticides and PCBs in Water
 Extraction Method: EPA 3510

COMPOUND	RESULT ug/L	DETECTION LIMIT ug/L
alpha-BHC	ND	1
beta-BHC	ND	1
gamma-BHC	ND	1
delta-BHC	ND	1
Heptachlor	ND	1
Aldrin	ND	1
Heptachlor Epoxide	ND	1
Endosulfan I	ND	1
Dieldrin	ND	1
pp-DDE	ND	1
Endrin	ND	1
Endosulfan II	ND	1
pp-DDT	ND	1
Chlordane	ND	10
Toxaphene	ND	10
Methoxychlor	ND	10
PCB 1016	ND	10
PCB 1221	ND	10
PCB 1232	ND	10
PCB 1242	ND	10
PCB 1248	ND	10
PCB 1254	ND	10
PCB 1260	ND	10

ND = Not detected.

QA/QC SUMMARY:

Duplicate: Relative % Difference
 Average Spike Recovery %

24
 89

LABORATORY NUMBER: 14724-2
 CLIENT: HARDING LAWSON ASSOCIATES
 JOB #: 2176,159/163/160.02, HUNTERS POINT
 SAMPLE ID: 8899BE02

DATE RECEIVED: 05/17/88
 DATE EXTRACTED: 05/31/88
 DATE ANALYZED: 06/02/88
 DATE REPORTED: 06/03/88
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EPA 608: Organochlorine Pesticides and PCBs in Water
 Extraction Method: EPA 3510

COMPOUND	RESULT ug/L	DETECTION LIMIT ug/L
alpha-BHC	ND	1
beta-BHC	ND	1
gamma-BHC	ND	1
delta-BHC	ND	1
Heptachlor	ND	1
Aldrin	ND	1
Heptachlor Epoxide	ND	1
Endosulfan I	ND	1
Dieldrin	ND	1
pp-DDE	ND	1
Endrin	ND	1
Endosulfan II	ND	1
pp-DDT	ND	1
Chlordane	ND	10
Toxaphene	ND	10
Methoxychlor	ND	10
PCB 1016	ND	10
PCB 1221	ND	10
PCB 1232	ND	10
PCB 1242	ND	10
PCB 1248	ND	10
PCB 1254	ND	10
PCB 1260	ND	10

ND = Not detected.

QA/QC SUMMARY:

Duplicate: Relative % Difference
 Average Spike Recovery %

24
 89

LABORATORY NUMBER: 14724-9
 CLIENT: HARDING LAWSON ASSOCIATES
 JOB #: 2176,159/163/160.02, HUNTERS POINT
 SAMPLE ID: 88990C04

DATE RECEIVED: 05/17/88
 DATE EXTRACTED: 05/31/88
 DATE ANALYZED: 06/01/88
 DATE REPORTED: 06/03/88
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EPA 608: Organochlorine Pesticides and PCBs in Water
 Extraction Method: EPA 3510

COMPOUND	RESULT ug/L	DETECTION LIMIT ug/L
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor Epoxide	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.05
pp-DDE	ND	0.05
Endrin	ND	0.05
Endosulfan II	ND	0.05
pp-DDT	ND	0.05
Chlordane	ND	0.5
Toxaphene	ND	0.5
Methoxychlor	ND	0.5
PCB 1016	ND	0.5
PCB 1221	ND	0.5
PCB 1232	ND	0.5
PCB 1242	ND	0.5
PCB 1248	ND	0.5
PCB 1254	ND	0.5
PCB 1260	ND	0.5

ND = Not detected.

QA/QC SUMMARY:

Duplicate: Relative % Difference	24
Average Spike Recovery %	89



Environmental Services Division
200 Bush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

Job Number: 2176, 159, 02
Name/Location: Hunter's Point
Project Manager: G. Goodman

Samplers: John SKALBECK
Jay Jasperse
Recorder: John Skalbeck
(Signature Required)

SOURCE CODE	MATRIX					#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/ NOTES
	Sludge	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃		Yr	Wk	Seq	Yr	Mo	Dy	Time	
80					X	2				88	99	BE 01	88	05	17	0945	Bldg 123 Sump
80					X	2				88	99	BE 02	88	05	17	1100	Bldg 123 Sump
33	X					5				88	99	PH 01	88	05	17	1145	Pump House
33	X					5				88	99	PH 02	88	05	17	1215	Pump House
33	X					5				88	99	PH 03	88	05	17	1240	Manhole - Pump House
48				X		1				88	99	OC 01	88	05	17	1419	Officers Club
48				X		1				88	99	OC 02	88	05	17	1428	Officers Club
48				X		1				88	99	OC 03	88	05	17	1437	Officers Club - Comp
10	X					5				88	99	OC 04	88	05	17	1445	Field Blank

ANALYSIS REQUESTED															
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals (TCP)	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 608/8080	Oil / Grease	Cyanide, Sulfide, pH	TPH					
				X		X									
				X		X									
			X	X		X	X	X							
			X	X		X	X	X							
			X	X		X	X	X							
			X	X		X		X							
			X	X		X		X							
			X	X		X		X							
			X	X		X	X	X							

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD		
Yr	Wk	Seq					RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
							John Skalbeck		
							RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
							RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
							RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
							DISPATCHED BY: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
							METHOD OF SHIPMENT		

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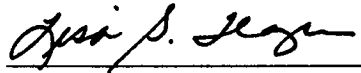
**BUILDING 123 INVESTIGATION
NAVAL STATION, TREASURE ISLAND
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA
November 2, 1988**

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QUALITY CONTROL REVIEWER



Lisa S. Teague
Geologist - 3839